

ShapeShifter - Game Flow Template

<p style="text-align: center;">Puzzle 1</p> <p>Puzzle: 4-Digit Lock</p> <p>Code: 6352</p> <p>How will they know: All teams need to complete their problems and add their words to the hung Symmetry Poster. On the symmetry clue poster, there will be 4 different shapes with different possibilities for the total lines of symmetry. The shapes will be in the order they need to enter the combo in <i>How many lines of symmetry does each shape have?</i></p>	<p style="text-align: center;">Puzzle 2</p> <p>Puzzle: Locked Pencil Box - To get the UV flashlight</p> <p>Code: 378</p> <p>How will they know: All teams need to complete their problems and add their words to the hung Classification of Shapes poster. They will be directed to scan the QR code to subscribe to my Aurasma channel and then scan the poster to see the Aurasma video that tells them exactly what to do.</p>	<p style="text-align: center;">Puzzle 3</p> <p>Puzzle: Push Button Lock Box & Keyed Lock</p> <p>Code: 451</p> <p>How will they know: All teams need to complete their problems and add their words to the hung Types of Triangles poster. <i>"Order of the amount of right, acute, and obtuse triangles. Look behind trash!"</i> The push button lock box with the key will be hidden behind the trash can.</p>	<p style="text-align: center;">Puzzle 4</p> <p>Puzzle: Directional Lock</p> <p>Code: W – E – N – E - S - W</p> <p>How will they know: All teams need to complete their problems and add their words to the hung Measuring Angles poster. The measuring angles worksheet needs to be hung right next to it and already have the right arrows written in invisible ink. <i>Write the measurement of each angle. Light the angles that add up to the given sum.</i></p>
<p style="text-align: center;">Puzzle 5</p> <p>Puzzle: Word Lock</p> <p>Code: Tails</p> <p>How will they know: All teams need to complete their problems and add their words to the hung Mystery Word poster. They will look for the novel and flip to page 47. <i>What is the Post-it word of page 47 of Class President book?</i></p>	<p>I wanted to ensure more participation, so I will be splitting kids up into small groups. The groups will be determined by class size, but there are 6 different "group sheets" to be solved simultaneously. As students solve the problems, they will collect words that will later be added to "posters" hung up. I plan on laminating the group sheets so I can use them multiple times, but I will print off multiple copies of the Answer Tracker sheets to make it easier for students to transfer their work from their team to the class "posters".</p> <p>You could consider giving the Group 6 set of problems to lower math students, many of the words they collect will also be discovered by other groups.</p>		

Breakout EDU Game Template

Game Name:

Game Creator Name: Leasha Wolterman

Ages: 4th Grade

Ideal Group Size: up to 30

YouTube video with set up walk through -

Content Area (optional): Math

Skills to review:

-lines and angles

-measuring angles

-perpendicular and parallel lines

-classification of shapes based on properties of their lines and angles

-symmetry

Backstory/Setting:

The ShapeShifter has escaped! He was found guilty of giving students false information so that they would FAIL their math tests. He has been behind bars for the past 3 months, but somehow he got out. He wants to reunite with his crew, so he left them clues to help them locate him faster. If YOU crack the clues before they do, we can throw him back in jail where he belongs.

Here's an example of the video I used to launch the game with my students. I used the free Adobe Voice app. You may have to tweak yours slightly.

<https://voice.adobe.com/a/ew3Q4/>

Materials:

Wooden Breakout Box

lock hasp (to hang 4 locks – 4-digit lock, keyed lock, Directional Lock, and Word lock)

locked pencil box

invisible ink pen

UV flashlight

I used a Master Lock Safe Space box to hide the key this time, but you could use a small box with a 3-digit lock, another locked pencil box, or adapt as necessary with what you have. 😊

Students need to be divided evenly between 6 groups. They will each have important information that will feed into other clues. **The words gained from the correct answers will feed into the phrases highlighted below**, starting on the next page. In case you're curious, here is the distribution of question types between the group sheets.

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Lines, Line Segments, Rays	2	2	2	2	2	2
Right, Obtuse, Acute Angles	2	2	2	2	2	2
Perpendicular vs Parallel	2	2	2	2	2	2
Right triangles	2	2	2	2	2	2
In shapes -2 sets of parallel lines -exactly 1 pair of parallel lines - no parallel lines	3	3	3	3	3	3


My district has a paid subscription to BrainPop, which is why I included the resources on the group sheets in case kids get stuck. If you don't have BrainPop, you may want to come up with another resource, or delete the icon all together. 😊

Helpful Anchor charts to have around the room depending upon your previous instruction


- Lines, Line Segments, Rays
- Right, Obtuse, Acute Angles
- Perpendicular vs Parallel
- Types of triangles
- Symmetry
- Measuring Angles

Shapes that have 1 PAIR of parallel lines


11



teacher




me




chair


8



ray




line




shape


52



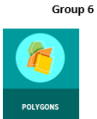
Post-it



notebook



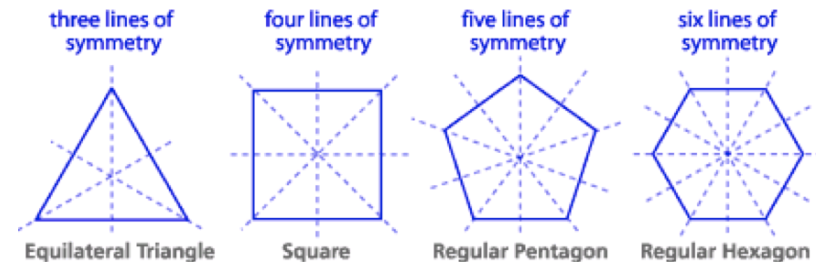
cup



Symmetry - 4-digit lock – 6352

On the **symmetry clue poster**, there will be 4 different shapes with different possibilities for the total lines of symmetry. The shapes will be in the order they need to enter the combo in

How many lines of symmetry does each shape have?



Classification of Shapes - Locked pencil box - 378

- **UV flashlight** inside

On the classification poster, there are random polygons covering the poster. The number of each type of identified shape will be a part of the 3-digit code for the pencil box

Scan me with Aurasma to figure out what to do! The Aurasma video indicates that to unlock the pencil box they need to enter the

- # of shapes with no parallel lines, then the
- # of shapes with 1 pair of parallel line followed by
- those with 2 pairs of parallel lines.

Types of Triangles - Push Button Lock Box with key hidden inside – but it could also be another locked pencil box if you wish- 451

On the **Types of Triangles sheet** the clue will read, “*Order of the amount of right, acute, and obtuse triangles. Look behind trash!*”

- make sure you hid the key inside the push button lock box and hide the box behind the trash. 😊

Key lock – key is hidden in the Push Button Lock Box that students will find behind a trash can

Measuring Angles - Directional Lock – W E N E S W

Write the measurement of each angle. Light the angles that add up to the given sum.

On the angles poster, there are variety of angles that the students need to measure. At the bottom of the poster there are equations ($___ + ___ = 85^\circ$) and above every angle on the worksheet, a specific arrow needs to be written in invisible ink)

Word Lock -

I ended up writing a word on a Post-It and stuck it on the top of page 47 of a novel I had hanging around. This special book, Class President, will be placed with another clue so it's obvious they need it. I wrote “Not heads but $___ ___ ___ ___$.” on the Post-it I stuck to page 47.

What is the Post-it word of page 47 of Class President book?

Layout of all of the words to create the message. The Group # signifies what group's paper you will find the clue on.

SYMMETRY POSTER

1	2	3	4	5	6	7	8	9				
Group 1	Group 2	Group 3 Group 6	Group 1	Group 2 Group 6	Group 4	Group 1	Group 4 Group 6	Group 2				
How	Many	Lines	Of	Symmetry	Does	Each	Shape	Have				

CLASSIFICATION OF SHAPES

10	11	12	13	14	15	16	17	18	19			
Group 5	Group 3 Group 6	Group 1	Group 4 Group 6	Group 3	Group 1	Group 4	Group 3	Group 5	Group 3			
Scan	Me	With	Aurasma	To	Figure	Out	What	To	Do			

TYPES OF TRIANGLES

20	21	22	23	24	25	26	27	28	29	30	31	32
Group 1	Group 2	Group 2	Group 4 Group 6	Group 2	Group 1	Group 5	Group 4	Group 2	Group 4	Group 5	Group 2	Group 5
Order	of	The	Amount	Of	Right	Acute	and	Obtuse	Triangles	Look	Behind	trash

MEASURING ANGLES

33	34	35	36	37	38	39	40	41	42	43	44	45
Group 3	Group 3	Group 2 Group 5	Group 1	Group 3	Group 4 Group 6	Group 1	Group 5	Group 3	Group 5	Group 2	Group 5	Group 6
Write	The	Measurement	Of	Each	Angle	Light	The	Angles	That	Add	Up	To
46	47	48										
Group 3	Group 3 Group 4	Group 1 Group 6										
The	Given	sum										

Mystery Word

49	50	51	52	53	54	55	60	56	57	58	59				
Group 4	Group 1	Group 2	Group 5 Group 6	Group 2 Group 6	Group 1	Group 5	Group 6	Group 5	Group 4	Group 4	Group 3				
What	Is	The	Post-it	word	of	Page	47	Of	Class	President	book				

Dear Crew,

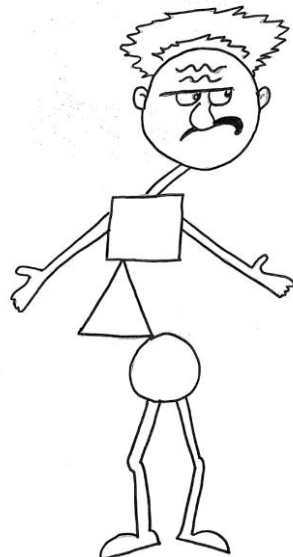
Long time, no see! I busted out of the joint and am ready to misinform more math students!

Come find me in my new secret hide-away at

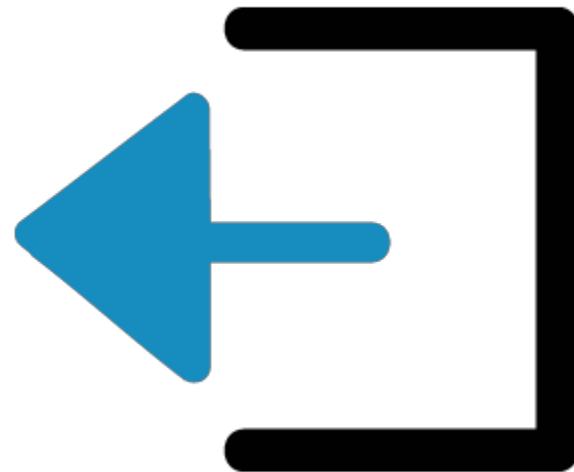
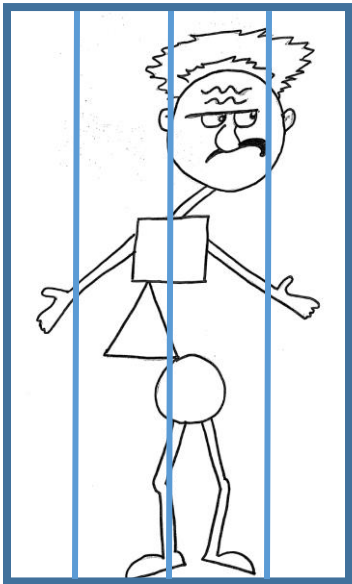
Latitude: 41.878885°
Longitude: -87.635878°

Memorize the location and destroy this paper. I'd hate for the authorities to get ahold of it!

See you soon!



We broke out and captured ShapeShifter!



Setting up the classroom once the materials are prepped.

- **Place ShapeShifter's letter to his crew inside box. Attach the lock hasp and 4 locks**
- **Hide push button box (with key inside) behind trash can**
- **Divide class into 6 equal groups and assign one group sheet set per group**
- **Hang up the "posters" – maybe close together?**
 - **Symmetry**
 - **Classification of Shapes**
 - **Also include the Aurasma information to subscribe to my channel AND how to view the video**
 - **Types of Triangles**
 - **Measuring Angles**
 - **Also include the Measuring angles worksheet with the invisible ink arrows for directional lock**
 - **Mystery Word**
- **Open ShapeShifter Breakout EDU launch PowerPoint**
- **Open hyperlink with backstory video**
- **Open hyperlink with timer**